CLAIMS

What is claimed:

1. An applicator assembly for applying a primary coating material, a secondary coating material and a color coating material to an optical fiber, the assembly comprising:

a pressurized source of the primary coating material;

a primary reservoir in fluid communication with the pressurized source of the primary coating material, the primary reservoir being configured for applying a layer of the primary coating material to the optical fiber;

a primary die adjacent the primary reservoir, the primary die including a primary land configured to size the layer of the primary coating material;

a pressurized source of the color coating material;

a color reservoir in fluid communication with the pressurized source of the color coating material, the color reservoir being configured for applying a layer of the color coating material to the optical fiber;

a color die adjacent the color reservoir, the color die including a color land configured to size the layer of the color coating material;

a pressurized source of the secondary coating material;

a secondary reservoir in fluid communication with the pressurized source of the secondary coating material, the secondary reservoir being configured for applying a layer of the secondary coating material to the optical fiber; and

a secondary die adjacent the secondary reservoir, the secondary die including a secondary land configured to size the layer of the secondary coating material; and

wherein the primary reservoir, color reservoir and the secondary reservoir are in fluid communication.

2. The applicator assembly of claim 1, further comprising:

an entry die including an entry land, wherein the entry land, the primary land, the color land, and the secondary land are substantially axially aligned, and wherein the primary reservoir is disposed between the entry land and the primary land, the color reservoir is disposed between the primary land and the color land, and the secondary reservoir is disposed between the color land and the secondary land.

3. The applicator assembly of claim 1, further comprising:

an entry die including an entry land, wherein the entry land, the primary land, the color land, and the secondary land are substantially axially aligned, and wherein the primary reservoir is disposed between the entry land and the primary land, the secondary reservoir is disposed between the primary land and the secondary land, and the color reservoir is disposed between the secondary land and the color land.

4. The applicator assembly of claim 1, further comprising:

an entry die including an entry land, wherein the entry land, the primary land, the color land, and the secondary land are substantially axially aligned, and wherein the color reservoir is disposed between the entry land and the color land, the primary reservoir is disposed between the color land and the primary land, and the secondary reservoir is disposed between the primary land and the secondary land.

5. The applicator assembly of claim 1, further comprising:

an entry die including an entry land;

a second primary reservoir for applying a second layer of the primary coating material to the optical fiber;

a second primary die including a second primary land configured to size the second layer of the primary coating material; and

wherein the entry land, the primary land, the second primary land, the secondary land, and the color land are substantially axially aligned.

6. The applicator assembly of claim 5, wherein the color reservoir is disposed between the entry land and the color land, the primary reservoir is disposed between the color land and the primary land, the second primary reservoir is disposed between the primary land and the second primary land, and the secondary reservoir is disposed between the second primary land and the secondary land.

7. The applicator assembly of claim 5, wherein the primary reservoir is disposed between the entry land the primary land, the second primary reservoir is disposed between the primary land and the second primary land, the color reservoir is disposed between the second primary land and the color land, and the secondary reservoir is disposed between the color land and the secondary land.

8. The applicator assembly of claim 5, wherein the primary reservoir is disposed between the entry land and the primary land, the second primary reservoir is disposed between the primary land and the second primary land, the secondary reservoir is disposed between the second primary land and the secondary land, and the color reservoir is disposed between the secondary land and the color land.

9. The applicator assembly of claim 1, wherein at least one of the pressurized source of the primary coating material, the pressurized source of the color coating material, and the pressurized source of secondary coating material is a pump.

10. A method of forming an optical fiber, comprising the steps of:

drawing an optical fiber;

applying a layer of primary coating material to the optical fiber;

applying a layer of color coating material to the optical fiber;

applying a layer of secondary coating material to the optical fiber; and

wherein the layer of primary coating material, the layer of color coating material, and the layer of secondary coating material are each applied prior to the other layers being cured.

11. The method of claim 10, wherein the layer of color coating material is disposed between and adjacent the optical fiber and the layer of primary coating material.

12. The method of claim 10, wherein the layer of color coating is disposed between and adjacent the layer of primary coating material and the layer of secondary coating material.

13. The method of claim 12, wherein the step of applying a layer of the primary coating material further comprises applying a first layer of primary coating material adjacent the optical fiber and applying a second layer of primary coating material between and adjacent the first layer of primary coating material and the layer of secondary coating material.

14. The method of claim 10, wherein the layer of primary coating material is disposed between and adjacent the optical fiber and the layer of secondary coating material and the layer of color coating material is disposed adjacent the layer of secondary coating.

15. An optical fiber formed by the method of claim 10.

16. A method of forming an optical fiber, comprising the steps of:

(a) drawing an optical fiber;

(b) applying a layer of primary coating material to the optical fiber;

(c) applying a layer of color coating material to the layer of primary coating material; and

(d) applying a layer of secondary coating material to the layer of color coating material.

17. The method of claim 16, wherein (c) further comprises applying a second layer of primary coating between and adjacent the first layer of primary coating material and the layer of secondary coating material.

18. An optical fiber comprising:

a layer of primary coating material having a first modulus;

a layer of color coating material having a second modulus;

a layer of secondary coating having a third modulus; and

wherein the first modulus, the second modulus, and the third modulus are different values.

19. The optical fiber of claim 18, wherein the layer of color coating material is adjacent the optical fiber and the layer of primary coating material.

20. The optical fiber of claim 19, wherein the layer of color coating material has a thickness of between 2 to 10 microns.

21. The optical fiber of claim 19, wherein the layer of color coating material has a thickness of between 4 to 7 microns and the layers of primary coating material and secondary coating material each has a thickness from 15 to 40 microns.

22. The optical fiber of claim 18, wherein the layer of color coating material is adjacent the layer of primary coating material and the layer of secondary coating material.

23. The optical fiber of claim 22, wherein the layer of color coating has a thickness of between 2 to 10 microns.

24. The optical fiber of claim 22, wherein the layer of color coating material has a thickness of between 4 to 7 microns and the layers of primary coating material and secondary coating material each has a thickness from 15 to 40 microns.

25. The optical fiber of claim 18, wherein the layer of color coating material is adjacent the layer of the secondary coating material and further comprises an outermost layer of the optical fiber.

26. The optical fiber of claim 22, wherein the layer of color coating material has a thickness of between 2 to 10 microns.

27. The optical fiber of claim 22, wherein the layer of color coating material has a thickness of between 4 to 7 microns and the layers of primary coating material and secondary coating material each has a thickness from 15 to 40 microns.

28. A system for forming an optical fiber, comprising:

means for drawing an optical fiber;

means for applying a layer of primary coating material to the optical fiber;

means for applying a layer of color coating material to the layer of the primary coating material, but before the application of a layer of secondary coating material; and

means for applying the layer of secondary coating material to the layer of the color coating material.

29. The system of claim 28, wherein the means for applying a layer of primary coating material further comprises means for applying a first layer adjacent the optical fiber and means for applying a second layer adjacent the first layer.